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(54) **Bracelet**

(57) A bracelet which comprises a plurality of interconnected links (10 and 11), at least one pair of which are releasably connected together by an elongate locking pin (16) located within a hole (15') provided transversely across the pair of links (10 and 11). The locking pin (16) is fixed in position by engagement with a positioning tube (18) provided within the hole (15').

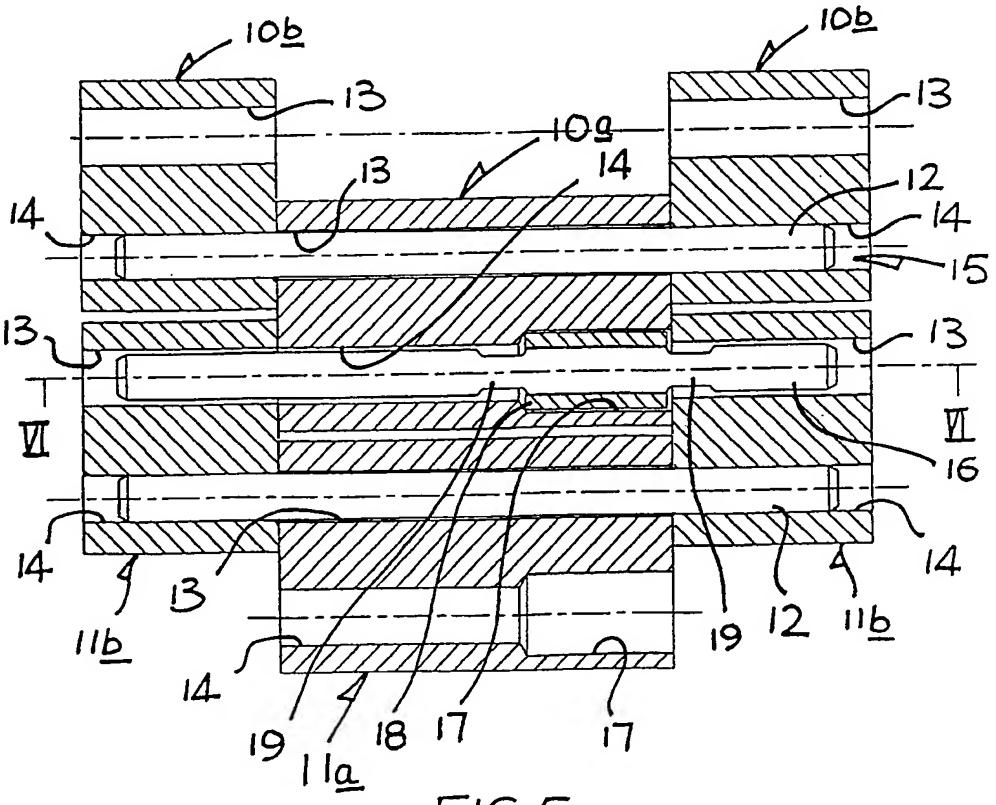

FIG. 5

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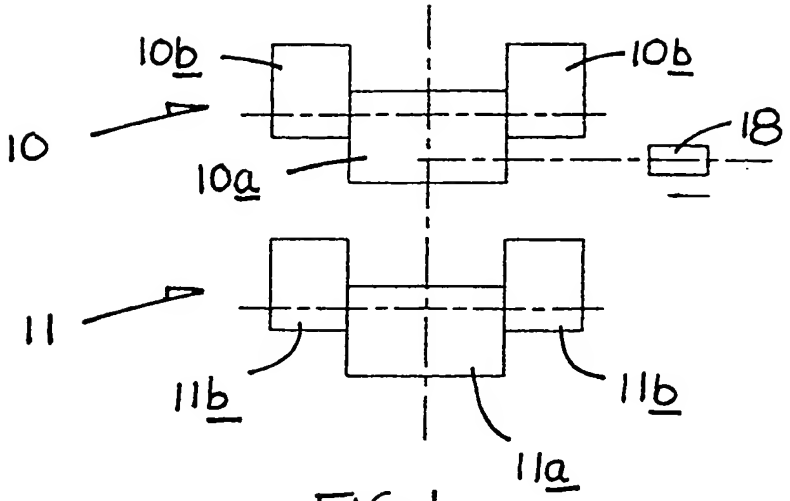

FIG. 1

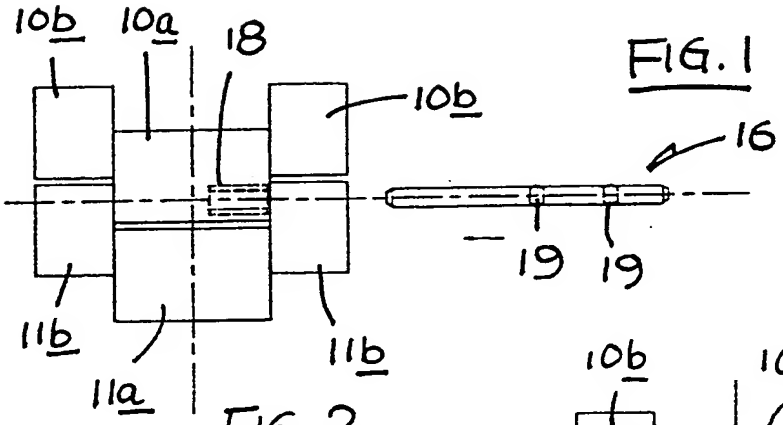

FIG. 2

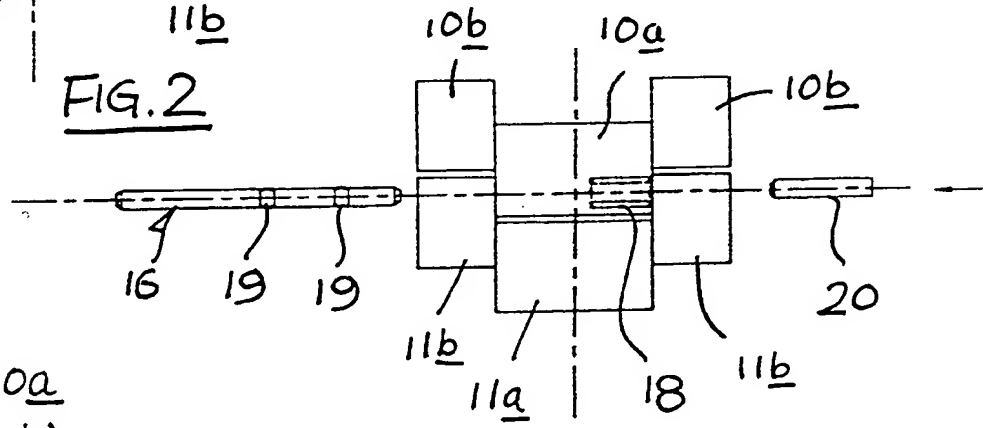

FIG. 3

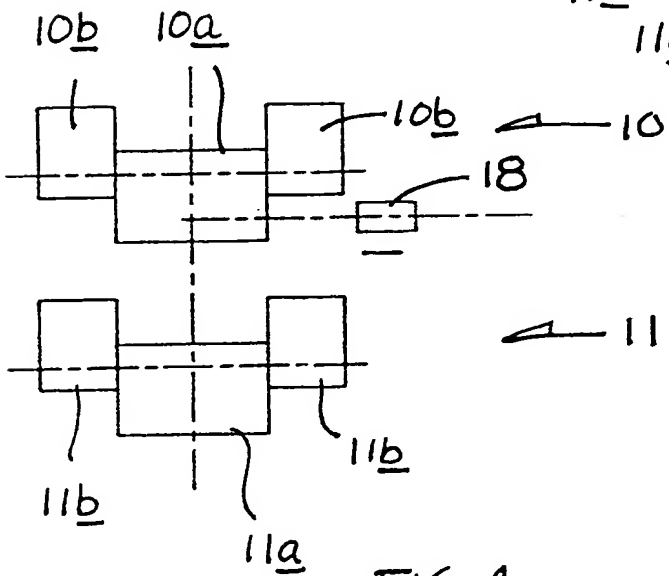

FIG. 4

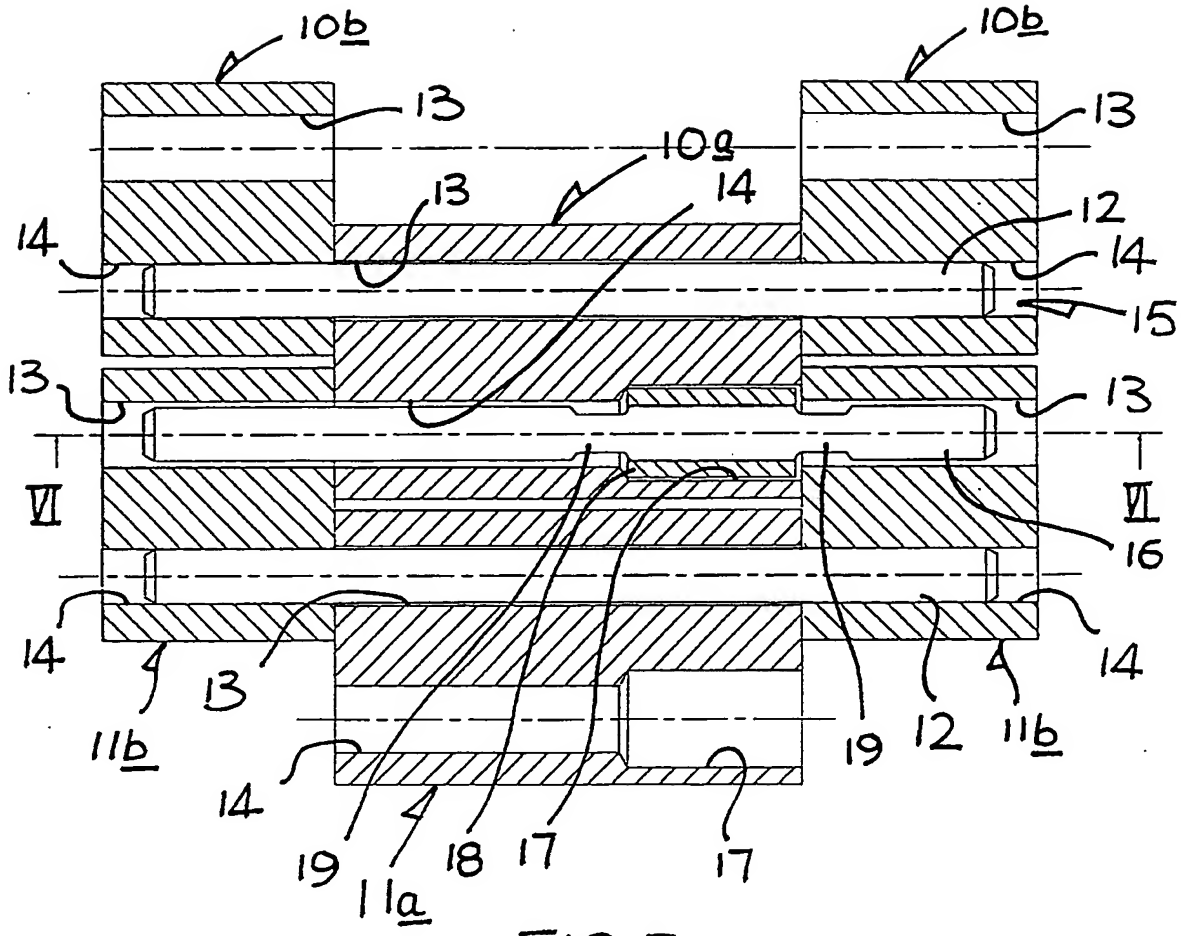

FIG. 5

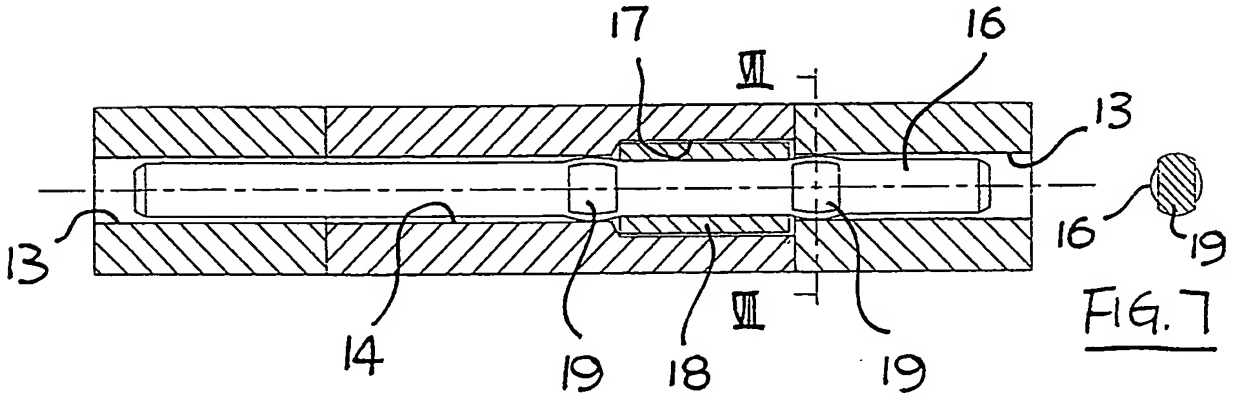

FIG. 7

FIG. 6

BRACELET

The present invention relates to a bracelet and particularly but not exclusively to a wrist watch bracelet, of which the length is adjustable.

Wrist watch bracelets are known to be made up of a chain of connected metal links. Adjacent links are usually connected together by means of an interlocking metal strip or pin. In order to adjust the length of the bracelet, one or more links have to be added to or removed from the bracelet, and in doing so the corresponding locking pin or pins must firstly be removed transversely from the bracelet and subsequently re-inserted, where necessary.

Locking pins are designed to enable quick installation or release, and are usually located in position within a bracelet by means of rigid friction. Such an engagement is found not to be always reliable or consistent, in that it is often too tight for new bracelets and too loose after the components have been subject to wear and tear in the course of use.

The invention seeks to provide a bracelet of which the length adjustment does not have the aforesaid disadvantages.

According to the invention, there is provided a bracelet which comprises a plurality of interconnected links, at least one pair of which are releasably connected together by a elongate locking member located within a hole provided transversely

across the pair of links, wherein the locking member is fixed in position by engagement with a positioning member provided within the hole.

In an embodiment, the positioning member is annular and is preferably in the form of a tube.

The locking member conveniently comprises a pin.

It is preferred that the first one of the pair of links has at one end two spaced apart projections, and the second one of the pair of links has at one end a projection which is located between the two projections of the first link of the pair.

In a preferred embodiment, the positioning member is located within one side of the projection of the second link of the pair.

Advantageously, the locking member engages with the positioning member as a snap-fit.

Preferably, the locking member has at least one lateral projection, by means of which the locking member engages with the positioning member as a snap-fit.

It is preferred that the locking member has a pair of spaced apart lateral projections between which the positioning member

is snap-fit into place.

The projection or projections are conveniently formed by transverse compression acted upon the locking member.

The invention also provides a wrist watch incorporating such a bracelet.

The invention will now be more particularly described, by way of example only, with reference to the accompanying drawings, in which:

Figures 1 and 2 show how two links of an embodiment of a bracelet in accordance with the invention are connected together by a locking member (pin);

Figures 3 and 4 show how the bracelet links of Figures 1 and 2 are disconnected;

Figure 5 is a sectional view of the bracelet links of Figures 1 to 4, together with the locking member;

Figure 6 is a sectional view of the bracelet links and the locking member of Figure 5, taken along line IV-IV; and

Figure 7 is a sectional end view of the locking member of Figure 6, taken along line VII-VII.

Referring firstly to Figures 1 and 2 and 5 to 7 of the accompanying drawings, there are shown two metal sections or links 10 and 11 of an embodiment of a bracelet according to the invention. The bracelet links 10 and 11 are identical in construction, and reference is hereinafter made only to the bracelet link 10 for clarity, where necessary. The bracelet link 10 is formed by a central piece 10a permanently connected to two side pieces 10b by a metal pin 12, forming a single unit.

A pair of parallel, laterally extending holes 13 (upper) and 14 (lower) are provided in each link piece 10a or 10b. The side link pieces 10b align with each other, and the central link piece 10a is located between them in a staggered manner with its upper hole 13 in alignment with the lower holes 14 of the side link pieces 10b, thereby forming a joint hole 15 into which the metal pin 12 is inserted.

The pin 12 engages at its two ends as a force fit with the corresponding side link pieces 10b, whilst the central link piece 10a is hinged on the pin 12 between the two side link pieces 10b, such that the unit so formed is foldable in itself.

The manner in which the bracelet links 10 and 11 are releasably connected together are best shown in Figures 5 and 6. The downward projecting central piece 10a of the bracelet link 10 is placed between the upward projecting side pieces

11b of the bracelet link 11, with their holes 14 and 13 in alignment to form a joint hole 15'. A locking pin 16 is inserted into the hole 15' for connecting the bracelet links 10 and 11 together. An end section 17 of the hole 14 of the central piece 10a of the bracelet link 10 is enlarged in diameter, in which a tube 18 is located. The tube 18 is held captive in position by and between the inner end of the enlarged section 17 and the adjacent side piece 11b of the bracelet link 11.

The general diameter of the locking pin 16 is the same as or slightly smaller than the inner diameter of the tube 18. The locking pin 16 passes through the tube 18 and is engaged therewith by two laterally expanded portions 19 which are provided on the pin 16 and immediately outside the corresponding ends of the tube 18. As also shown in Figure 7, the portions 19 are formed by compression acted upon (flattening) the locking pin 16 at the appropriate positions. It is appreciated that the locking pin 16 is positioned within the hole 15' through engagement by means of the tube 18.

As shown in Figures 1 and 2, the tube 18 is firstly inserted from the right completely into the enlarged section 17 of the hole 14 of the central bracelet link piece 10a before the two bracelet links 10 and 11 are brought together. The locking pin 16 is subsequently inserted into the hole 15', in either direction, and engaged with the tube 18 as a snap-fit after the leading expanded portion 19 of the locking pin 16 has

passed through the tube 18. During this action, the tube 18 expands laterally in order to permit the leading expanded portion 19 to pass through, and then returns to its original shape by virtue of its resilience.

In order to disconnect the bracelet links 10 and 11, the locking pin 16 is pushed, in either direction, out of the hole 15' by a hand tool in the form of a pin 20 having a diameter which is slightly smaller than the diameter of the holes 13 of the side bracelet link pieces 11b, as shown in Figures 3 and 4. If necessary, the tube 18 can be removed from the central link piece 10a after the two bracelet links 10 and 11 are separated.

The general diameter of the locking pin 16 is designed to be slightly smaller than the general diameter of the hole 15' so that the locking pin 16 can readily be removed from the hole 15' after the trailing expanded portion 19 has passed through the tube 18. Such a design also facilitates the insertion of locking pin 16 into the hole 15' during bracelet link connection.

It will be appreciated that the positioning member for positioning the locking pin within the bracelet links may take a form other than that of the tube 18, such as a helical coil spring or ring or in a different construction a U-shaped spring. Also, the locking pin may have in itself a contracted portion for engaging with the positioning member. In a

different embodiment, the engagement between the locking pin and the positioning member may be achieved by means of friction instead of snap-fit engagement.

The use of a separate positioning member to keep the locking pin in position within the bracelet links, instead of using the rigid inner wall of the hole through the bracelet links, has the advantage that the positioning engagement can be made more reliable and readily controllable.

The bracelet embodying the invention is made by connecting a plurality of the aforesaid links 10 and 11 together in succession. Most of the bracelet links are permanently connected together by means of fixed pins 12, and the other, for example those which are adjacent to a buckle of the bracelet, are connected together by releasable locking pins 16 in order to enable the overall length of the bracelet to be adjusted.

Such a bracelet is suitable for use as an ornament for wrists or for use with wrist watches.

The invention has been given by way of example only, and various other modifications of or alterations to the described embodiment may be made by persons skilled in the art without departing from the scope of the invention as specified in the appended claims.

CLAIMS

1. A bracelet comprising a plurality of interconnected links, at least one pair of which are releasably connected together by a elongate locking member located within a hole provided transversely across the pair of links, wherein the locking member is fixed in position by engagement with a positioning member provided within the hole.

2. A bracelet as claimed in claim 1, wherein the positioning member is annular.

3. A bracelet as claimed in claim 1 or claim 2, wherein the positioning member is in the form of a tube.

4. A bracelet as claimed in any one of claims 1 to 3, wherein the locking member comprises a pin.

5. A bracelet as claimed in any one of the preceding claims, wherein the first one of the pair of links has at one end two spaced apart projections, and the second one of the pair of links has at one end a projection which is located between the two projections of the first link of the pair.

6. A bracelet as claimed in claim 5, wherein the positioning member is located within one side of the projection of the second link of the pair.

7. A bracelet as claimed in any one of the preceding claims, wherein the locking member engages with the positioning member as a snap-fit.

8. A bracelet as claimed in claim 7, wherein the locking member has at least one lateral projection, by means of which the locking member engages with the positioning member as a snap-fit.

9. A bracelet as claimed in claim 8, wherein the locking member has a pair of spaced apart lateral projections between which the positioning member is snap-fit into place.

10. A bracelet as claimed in claim 8 or claim 9, wherein the projection or projections are formed by transverse compression acted upon the locking member.

11. A bracelet substantially as hereinbefore described with reference to the accompany drawings.

12. A wrist watch incorporating a bracelet as claimed in any one of the preceding claims.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number
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Relevant Technical fields

(i) UK Cl (Edition K) A3H

(ii) Int Cl (Edition 5) A44C

Search Examiner
R C SQUIRE

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search
24.10.91

Documents considered relevant following a search in respect of claims 1 TO 12

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2227155 A (STELUX)	1,4,5
X	EP 0347841 A1 (MONTRES RADO) see particularly column 5 lines 17 to 22	1 to 7
X	EP 0243315 A1 (CHATELAIN)	1,4,5
X	EP 0229908 A2 (JAEGER)	1,4
X	EP 0184697 A1 (MONTRES RADO)	1
X	EP 0165206 A1 (NOVAVIT)	1,2,4,5
X	WO 89/12758 A1 (NOVAVIT)	1,4
X	US 4554783 (KAWAGUSHIKO) see particularly column 3 line 59 to column 4 line 14	1,2,4,5

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Category	Identity of document and relevant passages	Relevant to claim(s.

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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P: Document published on or after the declared priority date but before the filing date of the present application.

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